

Project Profile

A Prescription for Continued Satisfaction— Merck's Worldwide Headquarters Expands its Use of *Infinity*



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—Sabi Bivas
Merck's Senior Systems Associate

Merck & Co., Inc., a leader in research-driven pharmaceutical products and services, showcases a premiere 18,000+ point Andover *Infinity* system in their Whitehouse Station, New Jersey corporate headquarters. This striking hexagon-shaped facility constructed in 1990 on a 530 acre site encompasses close to 900,000 square feet (83,613m²) of office facilities, a 700,000 square feet (65,032m²) underground parking garage, a child care facility, and a separate central utility plant.

Within Merck's corporate headquarters, the *Infinity* building automation system controls over 50 air handling units, more than 2,000 variable air volume terminal units, and over 50 zones of automated lighting! In addition, the smoke purge and fire control systems are integrated to the Andover system. In the central utility plant, three 1,250-ton and one 600-ton absorption chillers, a cooling tower, a backup boiler, and plate-and-frame heat exchangers are also under Andover control. The entire project was engineered and installed by Andover's *Engineered System Group (ESG)*.

Merck's *Infinity* system overlooks nothing. For example, their air handling units have as many as 100 points each. Merck believes that by tying additional control and monitoring points back to *Infinity*, they can more accurately monitor and fine tune system performance, reduce service calls, and have a better indication of where energy is being consumed in the facility at any given time.

And when it comes to energy tracking, Merck once again goes a step further. The *Infinity* system monitors over 2,200 utility-related data points (electrical, water, and fuel) and logs the data in the SX 8000 database every 15 minutes. Merck used *Powerbuilder* to design and implement a custom SX 8000 software interface that "mines" this data to produce energy analysis and management reports. From these reports, Merck analyzes raw utility allocations, individual feeder levels, system peaks, historical usage, etc. The information is also used to trend energy profiles within the Merck facilities, for internal utility billing purposes, to determine load shedding opportunities, and to track equipment run-hours for preventive maintenance scheduling.

The *Infinity* HVAC system hosts 9 SX 8000 workstations and 35 CX 9200 network controllers on a fiber optics dedicated Ethernet LAN. Merck's facilities personnel use two additional high-powered SX 8000 laptop computers to "plug in" and troubleshoot the *Infinity* system from any network hub throughout the huge facility. A wireless Ethernet LAN (RF) extends off one of the network nodes, providing real-time communications to nearby buildings.

Recently, a fully integrated *Infinity* security management system was added to Whitehouse Station, replacing the Cardkey system originally installed there. *Infinity* integrates 144 doors with card readers, CCTV, intercom, and 7 SX 8000 workstations plus a badging station. The security system, which is separate from the HVAC system, is connected to additional Merck sites.

To save Merck the expense of installing new card readers and rebadging all 6000 employees, Andover worked with the existing Cardkey brand readers, door hardware, and badges and designed a custom interface board (the EMX 34) for this project. The Andover EMX 34 converts the signals from up to four Cardkey brand readers into Wiegand format, which is then read by the Andover *Infinity* ACX 700/780 family of controllers.

The *Infinity* security system quickly proved its reliability and superior performance. According to Sabi Bivas, Merck's Senior Systems Associate, "We are weighing the option of installing the *Infinity* security management system at several additional Merck sites."

"What impresses us foremost about *Infinity* is its well designed, flexible, yet powerful, SX 8000 user interface and front-end software," says Bivas. "Andover's high technology approach provides us with the best of what's out there. And the company continues to respond to our needs — although we are not requesting custom work, Andover makes us feel like we are getting it."

Merck's Whitehouse Station headquarters is just one example of a proven track record Andover has maintained with the pharmaceutical giant since 1985. The *Engineered System Group* has also installed Andover systems at nine other sites, including Rahway, New Jersey; West Point, Pennsylvania; Arecibo, Puerto Rico; and Pomezia, Italy.



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PROJECT AT A GLANCE:

Project Type:

HVAC & Security

Project Name:

Merck Corporate Headquarters

Location:

Whitehouse Station, New Jersey

Market Segment:

Office

Number Of Buildings:

3

Total Area:

2 million sq.ft. (186,000 m²)

Infinity Equipment Installed:

39– CX 9200 network controllers
9 – SX 8000 workstations
2 – portable SX 8000 lap-tops
2,200 – TCX 850s
50– SCX 920s
100– LCX 810s
18– ACX 780s
13– ACX 700s
5 – IDX 800s
23– IDX 800is
3 – IDX 851s
15– EMX 190s
85– EMX 34s

Network:

Fiber optics dedicated Ethernet LAN (NetBeui protocol) with wireless Ethernet LAN extension (HVAC)
Separate security platform (TCP/IP protocol)

Applications:

Temperature and humidity control
Utility monitoring and reporting
Lighting control
Fuel monitoring
CCTV integration
Door monitoring and control
Intercom integration
Video integration and badging
Visitor processing

Third-Party Equipment and/or Drivers:

Secondary annunciation capabilities to Simplex fire alarm system
CCTV integration to American Dynamics system

Number of Controlled Doors:

140

Number of Cardholders:

6,000

Total System Points:

18,000 (HVAC) and 1,200 (security)